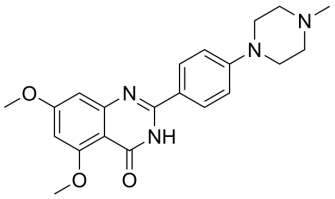
MR2938

Cat. No.:	HY-149087
CAS No.:	1044870-65-6
Molecular Formula:	$C_{21}H_{24}N_4O_3$
Molecular Weight:	380.44
Target:	Cholinesterase (ChE); NF-κB; Interleukin Related; TNF Receptor; CCR; NOD-like Receptor (NLR); JNK; NO Synthase
Pathway:	Neuronal Signaling; NF-κB; Immunology/Inflammation; Apoptosis; GPCR/G Protein; MAPK/ERK Pathway
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

MR2938 is a potent AChE inhibitor, with an IC_{50} of 5.04 μM. MR2938 also suppresses NO production obviously (IC_{50} = 3.29 μM). MR2938 suppresses the neuroinflammation through blocking MAPK/JNK and NF-κB signaling pathways. MR2938 can be used for Alzheimer's disease (AD) research[1].

IC_{50} & Target

AChE 5.04 ± 0.7 μM (IC_{50})	BChE >20 μM (IC_{50})	NF-κB	IL-1β
IL-6	NLRP3	JNK	

In Vitro

MR2938 (0-10 μM, 24 h) decreases the mRNA levels of pro-inflammatory cytokines IL-1β, TNF-α, IL-6 and CCL2 at 1.25 μM[1].
MR2938 (10 μM, 24 h) blocks NF-κB signaling pathway in LPS-induced BV-2 cells[1].
MR2938 (20 μM) shows inhibitory activities against AChE and BChE, with inhibitory rates of 91.8 ± 2.68% and 38.7 ± 11.7%, respectively[1].
MR2938 (0-10 μM) has little effect on cell viability on BV2 cell line[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

RT-PCR[1]

Cell Line:	BV-2 cells
Concentration:	0, 1.25, 2.5, 5, and 10 μM
Incubation Time:	24 h
Result:	Dramatically and dose dependently reduced the mRNA levels of inflammatory factors stimulated by LPS (1 μg/mL). Compared with TNF-α, the inhibitory effect of MR2938 on IL-1β, IL-6 and CCL2 was much potent.

Western Blot Analysis[1]

Cell Line:	BV-2 cells
Concentration:	10 μM

Incubation Time:	24 h
Result:	Suppressed the expression level of p65 protein, and reduced the p-p65 level. Reduced NLRP3 expression obviously. Reduced the phosphorylation level of JNK induced by LPS stimulation, while the level of JNK protein was hardly changed.

REFERENCES

[1]. Lv L, et al. Discovery of quinazolin-4(3H)-one derivatives as novel AChE inhibitors with anti-inflammatory activities. Eur J Med Chem. 2023 Apr 6;254:115346.

Caution: Product has not been fully validated for medical applications. For research use only.

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